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ABSTRACT

This report examines the status of elementary and secondary teaching as a profession in the United States. The primary data source is the 1990-91 Schools and Staffing Survey (SASS) conducted by the National Center for Education Statistics. The sample used contains data from 11,589 schools. This report assesses levels of teacher professionalization in elementary and secondary schools by examining a selected set of the traditional characteristics used to distinguish professions from other occupations. Tables provide data for these criteria: (1) credentials (professional hiring requirements); (2) induction (mentor programs, effective assistance); (3) professional development (continuing education support, participation in professional organization activities); (4) specialization (in-field teaching by secondary level teachers); (5) authority (teachers' decision making influence of school board, principal, and faculty); and (6) compensation (starting salary, maximum salary, paid benefits). Analyses are provided regarding differences in professionalization based on school size and the poverty level of the student populations for public schools, and the orientation or affiliation of private schools. Although all schools exhibited some characteristics of professional workplaces, it was found that most were lacking in or fell short on a number of the characteristics. Two appendixes list standard statistical error factors for tables and additional resources regarding the Schools and Staffing Survey. (Contains 63 references.) (JLS)

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Statistical Analysis Report January 1997

The Status of Teaching as a Profession: 1990–91

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Statistical Analysis Report January 1997

The Status of Teaching as a Profession: 1990–91

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Executive Summary

The objective of this report is to provide an empirical examination of the status of elementary and secondary teaching as a profession in the United States. The primary data source for this analysis is the nationally representative 1990–91 Schools and Staffing Survey (SASS), conducted by the National Center for Education Statistics (NCES).

Teacher professionalization—the movement to upgrade the status, training, and working conditions of teachers—has received a great deal of interest in recent years. This report addresses several questions concerned with this topic: How professionalized is elementary and secondary teaching? To what extent can elementary and secondary teachers be considered professionals, and to what extent can elementary and secondary schools be considered professionalized workplaces? Moreover, to what degree does teacher professionalization differ between various kinds of public and private schools across the United States?

This focus of this report is professionalization—not professionalism. The latter refers to the attitudes and beliefs of those who are considered to be, or aspire to be considered as, professionals. The former refers to the degree to which particular employees and their workplaces exhibit the attributes, characteristics, and criteria identified with professions and professionals. This report assesses levels of teacher professionalization in elementary and secondary schools by examining a selected set of traditional characteristics used to distinguish professions from other kinds of occupations:

Credentials

- the use of professional criteria for hiring teaching job candidates

Induction

- the provision of mentoring programs for beginning teachers
- the effectiveness of assistance provided to new teachers

Professional Development

- the provision of financial support for teachers' continuing education
- the extent of participation of teaching staffs in activities sponsored by professional teaching organizations

Specialization

- the extent to which secondary-level teachers teach subjects that match their fields of training

Authority

- the extent to which teachers influence school decisions concerned with key educational issues

Compensation

- the normal teacher starting salaries offered by schools
- the highest teacher salary levels offered by schools
- the numbers of paid benefits provided by schools

The 1990–91 SASS data show that, on the one hand, most elementary and secondary schools exhibited at least some of the characteristics traditionally associated with professionalized workplaces. The data also show, however, that despite a decade of reform initiatives, most schools lacked many of the characteristics associated with professionalization. For example, only a minority of schools provided assistance to new teachers that the teaching staffs strongly agreed was effective. Only a minority of schools provided financial reimbursement for teachers' continuing education tuition and fees. In only a minority of schools did principals report their faculties to have as much decisionmaking influence as they themselves had over key educational issues. Finally, starting salaries for teachers in most schools were lower than those in many other occupations that require a college education.

The data also show that schools varied in their degree of teacher professionalization, depending on the type of school. For instance, high-poverty public schools were less professionalized than public schools in more affluent communities, most notably, in professional development activities and their degree of faculty decisionmaking influence. Moreover, large public schools were slightly more professionalized than small public schools in several ways, including salary levels and paid benefits. On the other hand, large public schools were slightly less professionalized than small public schools in other ways, including assistance for newcomers and faculty participation in professional development programs.

The most striking differences in levels of teacher professionalization, however, were those found between public and private schools. The teaching job in private schools was in many ways far less professionalized than in public schools. Comparing across the characteristics examined in this report, public schools in more affluent communities were among the most professionalized of all schools. On the other hand, non-Catholic religious private schools were among the least professionalized of all schools. Public schools, as a whole, were more likely than private schools to use a full range of professional hiring requirements (e.g., certification in area of specialization, substantive training in area of specialization, completion of accredited training program, passage of examination). In addition, public school teachers did less teaching out of their fields of training. Public schools more often provided a full range of paid benefits (medical, dental, life insurance, retirement). Finally,

both starting and end-of-career teacher salaries were higher for public school teachers than for private school teachers.

On the other hand, teachers in private schools were more likely to report that assistance to beginning teachers was effective than were public school teachers. Moreover, private school principals more often reported their faculties to have substantial decisionmaking influence over key educational issues.

This report closes by discussing the important implications these findings have for current education research and policy in several areas, such as teacher credentials; the problems and prospects of beginning teachers; decisionmaking in schools; and comparisons between public and private schools.

Introduction

The status of elementary- and secondary-school teaching as a profession has been a source of perennial concern to education researchers and reformers since the turn of the century. Educators have repeatedly sought to promote the view that teaching, like other professions, is a highly complex kind of work that requires specialized knowledge and skill and, like other professions, deserves commensurate prestige, authority, and compensation. But, most researchers and reformers have concluded that these efforts have been only partially successful, with the result that teaching has long been regarded, correct or not, as a "semi-profession" (Lortie 1969, 1975).

However, since the early 1980s, the movement to promote the professional status of teaching has gained increasing momentum and widespread national attention. There has been a growing consensus among education reformers, policymakers, and researchers that many of the well-publicized shortcomings of the education system are, to an important extent, due to inadequacies in the resources, authority, preparation, compensation, and support provided to school teachers. As a result, numerous recent education initiatives have been undertaken in an attempt to upgrade the status, training, and working conditions of teachers. One of the more prominent examples of this upsurge in public recognition of the importance of teachers has been the addition of elementary and secondary teacher education and professional development to the National Education Goals, through the Goals 2000 federal education legislation. In short, there is a growing consensus that a key to improving the quality of schools lies in furthering the professionalization of teaching (e.g., Holmes Group 1986; Carnegie Forum 1986; Darling-Hammond 1984; Rosenholtz 1989; Sergiovanni and Moore 1989; Weis et al. 1989).

Although there has been an upsurge in interest and reform, much confusion continues to surround the status of teaching as a profession. Three reasons contribute to this lack of clarity. First, among those concerned with the status of teaching as a profession, there has been little consensus as to what constitutes the proper target of research and reform. The rhetoric, research, and reform surrounding teaching as a profession have focused on a wide range of different aspects of teachers, teaching, and schools. Moreover, there are wide differences in what is meant by a profession, professionalism, and professionalization for the case of teaching. For example, staff development—training and educational programs designed to upgrade the skills and knowledge of teachers—is the focus of many researchers and reformers. To others, however, the degree of staff collegiality and collaboration is the key focus. Many tend to focus on the individual attitudes teachers hold towards their work, such as the degree to which

teachers support high academic standards, while others are concerned with the organizational conditions in which teachers work, such as the degree to which school decisionmaking is centralized. Finally, to others, occupational characteristics, such as licensing and certification requirements for entry into teaching, are the primary concern. As a result of this wide range of emphases, it is often unclear whether researchers and reformers are referring to the same aspects and phenomena when they discuss or criticize the current status of teaching as a profession. (For examples of recent discussions of teaching as a profession, see Little 1990; Rowan 1994; Talbert and McLaughlin 1993; Labaree 1992.)

Second, most of the debate and discussion concerned with teaching as a profession has been highly prescriptive. Research and reform concerned with teacher professionalization are based on the view that professionalization will be highly beneficial to teachers, schools, and students. The rationale underlying this view is that upgrading the teaching occupation will lead to improvements in the motivation and efficacy of teachers, which, in turn, will lead to improvements in teachers' performance, which will ultimately lead to improvements in student learning (e.g., Carnegie Forum 1986; Darling-Hammond 1984; Holmes Group 1986; Darling-Hammond 1994). Hence, researchers and reformers have primarily directed their attention to the ways and means of altering the current state of affairs. There has been much less attention, and empirical research, directed to a more basic and perhaps more fundamental issue—what *is* the current state of affairs—that is, what is the current state of teaching as a profession?

Third, the teaching occupation is in a period of transition. A wide range of reforms designed to change teachers and teaching have been successfully implemented since the early 1980s. Many of these initiatives and efforts have been local, piecemeal, or targeted to specific kinds of schools or kinds of teachers (e.g., urban, high-poverty public schools, or mathematics and science teachers). Moreover, many of these reforms have advanced contradictory purposes or competing agendas. For example, some reforms have sought to improve teaching by increasing top-down, centralized control of teachers and schools (Darling-Hammond and Berry 1988; McDonnell 1989). Others have sought to improve teaching by precisely the opposite approach—increasing decentralization and school-based management (Rowan 1990; Malen and Ogawa 1988; Ingersoll 1994, 1996b).

As a result of the wide range of emphases and of the contemporary period of transition, the state of elementary and secondary teaching as a profession is unclear. The objective of this report is to empirically address this issue. The report focuses on two questions:

- How professionalized is the elementary and secondary teaching occupation?
- To what degree does teacher professionalization differ between various kinds of public and private schools across the United States?

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This report is designed to build on two other recent examinations of teachers published by the National Center for Education Statistics (NCES). The first, *America's Teachers: Profile of a Profession*, is a comprehensive examination of a wide range of data on teachers and teaching (Choy et al. 1993a). The second, *America's Teachers Ten Years After "A Nation at Risk,"* is a brief overview essay of changes in the state of the teaching occupation from the mid-1980s to the mid-1990s (Smith 1995).

This report offers a focused and in-depth empirical assessment of the status of teaching as a profession by turning to research from the sociology of work, occupations, and professions. Sociology has been among the most prominent disciplines to study the characteristics of professions. Sociologists have developed what is known as the *professional model*—a series of organizational and occupational characteristics associated with professions and professionals and, hence, useful to distinguish professions and professionals from other kinds of work and workers (Hughes 1965; Vollmer and Mills 1966; Hall 1968; Wallace 1994). These characteristics include rigorous training requirements, positive working conditions, high prestige, substantial authority, relatively high compensation, and an active professional organization or association. From this viewpoint, occupations can be assessed according to the degree to which they do or do not exhibit the characteristics of the professional model. The "established professions"—law and medicine, in particular—are usually regarded as the strongest examples of the professional model. The process whereby occupations seek to upgrade their professional status by adopting the attributes of the professional model is known as *professionalization*.

Sociologists have been careful to distinguish *professionalization* from *professionalism*. The former refers to the degree to which occupations exhibit the *structural* attributes, characteristics, and criteria identified with the professional model. The latter refers to the *attitudinal* attributes and ideology of those who are considered to be, or aspire to be considered as, professionals. These include commitment to a career, a belief in the value of expertise, and a public-service orientation. Although professionalism is often considered part of the professionalization process, it is not considered a reliable indicator of the professional model. On the one hand, some occupational groups that express the ideas and ideology of professionalism, in reality, may not be very advanced in regard to professionalization. On the other hand, some established professions that are advanced in regard to professionalization, in reality, do not widely exhibit the ideology and attitudes of professionalism (e.g., Hughes 1965; Vollmer and Mills 1966; Hall 1968).

The objective of this report is to describe the extent to which elementary and secondary teaching exhibits the characteristics of the professional model and the extent to which this professionalization differs among various kinds of schools across the United States. Hence, the focus of this report is on the characteristics of school workplaces and teaching staffs, and not on the attitudes of individual teachers. Moreover, the intent of this report is neither explanatory nor evaluative, but descriptive. That is, it does not intend to provide an explanation of the sources or causes of teacher professionalization, nor an analysis of its consequences or effects. This analysis, for example, does not seek to evaluate whether or not

professionalization in education is beneficial for teachers, schools, or students. Another NCES report, *Teacher Professionalization and Teacher Commitment—A Multilevel Analysis*, focuses on this latter topic (Ingersoll 1996a).

The following section describes in more detail six characteristics traditionally associated with the professional model, and for each, suggests possible empirical indicators that could be applicable to the case of teachers, teaching, and schools.

Characteristics of Professions and Professionals

Credentials

Social scientists traditionally have distinguished professions from other kinds of occupations by the degree of expertise and complexity involved in the work itself. The assumption is that professional work involves highly complex sets of skills, intellectual functioning, and knowledge that are not easily acquired and not widely held. For this reason, professions are often referred to as the "knowledge-based" occupations (e.g., Hughes 1965; Vollmer and Mills 1966; Hall 1968; Etzioni 1969; Larson 1977; Friedson 1986; Abbott 1988; Wallace 1994; Hodson and Sullivan 1995). But, even if laypeople were to acquire these complex sets of skills and knowledge, they would not be able to practice as professionals. Professions require credentials. That is, nearly all professions require completion of an officially sanctioned or accredited training program and passage of examinations in order to obtain certification or licensure to practice. Indeed, it is illegal to practice most professions without a license (Collins 1979). These credentials serve as screening devices. Their rationale is protection of the interests of the public by assuring that practitioners hold an agreed-upon level of knowledge and skill, and by filtering out those with substandard levels of knowledge and skill. The importance of such credentials is evidenced by the practice, commonly used by professionals, such as physicians, dentists, architects, and attorneys, of prominently displaying official documentation of their credentials in their offices (e.g., Hodson and Sullivan 1995).

Upgrading the training and licensing requirements for new teachers has been an important focus of school reform over the past decade (National Commission on Excellence in Education 1983; Holmes Group 1986). Advocates of such reforms argue that teachers, like traditional professionals, should not be amateurs or dilettantes, but experts. In this view, efforts to upgrade credential requirements, such as tightening the entry-level standards for new teachers, would help insure that teachers possess expertise over the bodies of knowledge they will teach (Darling-Hammond 1984). Hence, one important indication of teacher professionalization would be the extent to which school officials require applicants for teaching positions to be formally trained in an accredited program and tested and licensed in both teaching skills and subject knowledge, especially in the fields they will be assigned to teach.

Induction

In addition to initial formal training and preparation, professional work requires extensive training for new practitioners once on the job. Such training is designed to pick up where pre-service training has left off. That is, while entry examinations in many professions are usually designed to insure that new entrants have a minimum or basic level of knowledge and skill, induction programs for practitioners are designed to augment this basic level of knowledge and skill. As a result, entry to professions typically involves both formal and informal mechanisms of induction—internships, apprenticeships, or mentoring programs (Hughes 1965; Etzioni 1969; Larson 1977; Abbott 1988). Sometimes these periods of induction can be prolonged and intensive, as in the case of physicians' internships. The objective of such programs and practices is to aid new practitioners in adjusting to the job environment, to familiarize them with the concrete realities of their jobs, and to provide a second opportunity to filter out those with substandard levels of skill and knowledge.

Mentoring or other programs designed to assist new teachers have also been the subject of recent school reform efforts. The teaching occupation has long been plagued by high attrition rates among new staff. School reformers have argued that one of the best ways to increase the efficacy and retention of new teachers is to assist them in coping with the practicalities of teaching, of managing groups of students, and of adjusting to the school environment (Sclan 1993; Murnane et al. 1992). Hence, from this viewpoint, one useful indication of teacher professionalization would be the extent to which schools provide for beginning teachers mentoring or other programs that are effective in assisting them in coping with their jobs.

Professional Development

Beyond both pre-service basic training and mentoring for beginners, professions also require ongoing in-service technical development and growth on the part of practitioners throughout their careers. The assumption is that achieving a professional level of mastery of the complex skills and knowledge is a prolonged and continuous process and, moreover, that professionals must continually update their skills as the body of technology, skill, and knowledge advances. As a result, professionalized workplaces typically both require and provide support for employee development and, in addition, recognize and reward employee growth through formal avenues of promotion and mobility (Hall 1968; Wallace 1994; Hodson and Sullivan 1995).

School reformers also have recognized the importance of professional development to the teaching occupation. Indeed, as mentioned earlier, the Goals 2000 federal legislation added increased support for the professional development of the teaching workforce to the national education goals (National Foundation for the Improvement of Education 1993). Hence, one important indication of professionalization in schools would be the provision of and teacher use of opportunities for ongoing growth and development of expertise.

Specialization

Another of the traditional attributes that distinguishes professions from other occupations is specialization—professionals are not generalists, but instead possess expertise over a specific body of knowledge and skills. The assumption is that, given the complexity of the work, professionals must specialize in order to develop appropriate levels of expertise. Additional certification or licensure in a specialty or subfield is common in some professions, such as medicine and law. In turn, in order to efficiently utilize this specialized expertise, professionalized workplaces typically are characterized by a division of labor based on skill and training (e.g., Hughes 1965; Hall 1968; Etzioni 1969; Abbott 1988; Wallace 1994).

Increasing the substantive course requirements for certification in a specialty area has been an important focus of school reform over the past decade (National Commission on Excellence in Education 1983; Holmes Group 1986). Advocates of such reforms argue that teachers should have substantial training and expertise in the specific fields they teach. From this viewpoint, one key empirical indicator of the degree of professional specialization in schools, especially at the secondary level, would be the extent to which teachers are assigned to teach subjects for which they have been trained. Hence, professionalization in schools would lead to a decrease in teachers teaching subjects for which they have little or no training and would lead to efforts to maximize the degree of match between teachers' expertise and school curriculum needs.

It should be noted that a great deal of disagreement surrounds the topic of teacher specialization. A number of school researchers have argued that specialization, especially at the elementary-school level, does not address the needs of the "whole child," unduly fragments the educational process, and, hence, contributes to the alienation of students (e.g., Sizer 1992). On the other hand, especially at the secondary-school level, and especially in the core academic subjects, a clear case can be made that teachers ought to have at least minimal substantive training in the fields they teach (e.g., Ingersoll 1995; Darling-Hammond and Hudson 1990). The purpose of this analysis, however, is not to enter the debate as to whether specialization, in particular, or professionalization, in general, are beneficial or not for students, teachers, or schools; the purpose is to establish to what extent teacher professionalization and specialization occur.

Authority

Another of the hallmarks of a profession is substantial employee authority over decisions concerning workplace policies. A key distinction in any organization is whether key policies and decisions concerned with technical and production processes are controlled from the administrative center or whether these are delegated to employees and, hence, decentralized. Professionalized employees have authority approaching that of management when it comes to decisions concerned with technical issues (e.g., Hall 1968; Larson 1977; Friedson 1986). The rationale behind increasing levels of professional authority is to place substantial levels of

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control and autonomy into the hands of those who are closest to and most knowledgeable of technical processes. That is, professionals are considered experts in whom substantial authority is vested.

For example, in hospitals, physicians traditionally have had substantial control over medical decisions concerning the care of patients (Friedson 1986; Hodson and Sullivan 1995). Likewise, attorneys employed by law firms traditionally have had similar control over decisions concerning the provision of legal services for clients (Wallace 1994). Hence, for evaluating teacher professionalization, a key empirical indicator would be: Which group has more influence over important *educational* activities, administrators or faculty?

Compensation

Professionals are typically well-compensated and are provided with relatively high salary and benefit levels throughout the career span (Hodson and Sullivan 1995). The assumption is that, given the lengthy training and the complexity of the knowledge and skills required, relatively high levels of compensation are necessary to recruit and retain capable and motivated individuals (Etzioni 1969; Hodson and Sullivan 1995). Starting salary and paid benefit levels provide some indication of how well particular kinds of workplaces are able to compete for the pool of capable individuals. Advanced or end-of-career salary levels provide some indication of the ability of particular kinds of workplaces to retain and motivate capable individuals. The gap between starting salaries and end-of-career salaries provides some indication of the extent of opportunity for promotion, and the range of monetary rewards available to employees as they advance through their careers. From this viewpoint, a professionalized teaching job would offer salaries and benefits competitive with those in the established professions.

The series of characteristics described above has been widely used to distinguish professional from nonprofessional work, workers, and workplaces. These, of course, are not the only characteristics used to define professions, nor are they the only kinds of criteria used to distinguish work and occupations in general. For instance, a traditional aspect of professions, not discussed here, is high prestige; professionals consistently are rated highly in surveys of occupational prestige (National Opinion Research Center 1983). Another traditional hallmark, also not described here, is self-governance. Professional organizations undertake much of the regulation of practitioners. Such organizations, for example, may set and enforce behavioral and ethical standards for practitioners, and may also exert substantial control over the curriculum, admissions, and accreditation of professional training schools (Hodson and Sullivan 1995). But, the characteristics described above are among the most widely used indicators of professions and professionals, are the subject of much discussion in reference to teachers and schools, and are those for which national data are available. The objective of this analysis is to use empirical indicators of these particular characteristics to assess the degree of teacher professionalization in elementary and secondary schools across the United States.

Data and Measures

The primary data source for this study is the 1990–91 Schools and Staffing Survey (SASS)—a nationally representative survey conducted by NCES. The U.S. Census Bureau collected these data for NCES in winter 1991 from a random sample stratified by state, sector, and school level. Because all figures and estimates in this report are based on samples, they are subject to sampling error. Standard errors indicating the accuracy of selected estimates are included in Appendix A. All comparisons and differences discussed in the text are statistically significant at the .05 level, unless otherwise noted.

The 1990–91 SASS included four sets of linked questionnaires: for each school sampled, for the principal or headmaster of each school, for the central district board (public sector only), and for a subsample of the faculty within each school. Within each school, from 3 to 20 teachers (average of 4) were randomly sampled, depending on level, size, and sector.

SASS is particularly useful for analyzing the status of teaching as a profession. It is the largest and most comprehensive dataset available on the staffing, occupational, and organizational characteristics of schools in the United States. Indeed, until this survey was first conducted in 1987–88, there had been a paucity of nationally representative data on such issues. It includes a wide range of information on the characteristics and work of teachers and the characteristics and conditions of schools and school districts across the country.

The units of analysis in this study are schools and not individuals in schools. The data represent either school-level responses, as in the case of information collected from administrators, or school-wide means, as in the case of information collected from teachers. Teacher weights were used in aggregating the teacher data. School weights were used in the analysis proper. Aggregating individual-level data in the case of teachers, of course, ignores within-school diversity, but it allows the empirical analysis to narrow its focus to the topic of interest—the levels and variations of teacher professionalization among different kinds of schools.

Because of its unusually large and comprehensive school sample, SASS is especially useful for conducting such a school-level analysis. The actual sample used in this analysis contains 11,589 schools and supports national estimates by numerous school characteristics. More

detail on the technical aspects of the 1990–91 SASS are included in the Technical Notes at the end of this report.[1]

This analysis drew items from the District, School, Administrator, and Teacher Questionnaires of SASS to develop a series of empirical measures representing school-level indicators for each of the six characteristics of professionalization, described above. These measures of teacher professionalization are defined in figure 1. The questionnaire items used in the measures and more details on the construction of selected variables are included in the Technical Notes.

Figure 1— Measures of teacher professionalization

Credentials

- *Professional Hiring Requirements*: on a scale of 0–4, the sum of four possible criteria required of candidates for teaching positions, as reported by school administrators: (a) full standard state certification for the field to be taught, (b) graduation from a state-approved teacher education program, (c) college major or minor in the field to be taught, and (d) passage of a national, state, or local teachers' examination.

Induction

- *Mentor Program*: yes/no—availability of formal mentor program to help beginning teachers, as reported by school administrators.

- *Effective Assistance*: on a scale of 1 = strongly disagree to 4 = strongly agree, the school mean of the amount of agreement of all teachers with the statement "this school is effective in assisting new teachers" in each of the following matters—student discipline, instructional methods, curriculum, and adjusting to the school environment. Assistance is defined as "effective" if the mean score for the four areas was greater than or equal to 3.5.

Professional Development

- *Continuing Education Support*: yes/no—availability of reimbursement for teachers' tuition and course fees, as reported by school administrators.

- *Participation in Professional Organization Activities*: on a scale of 0 = none, 1 = less than once a year, 2 = once or twice a year, 3 = three or more times a year, the school mean of teachers' reports of their participation in workshops, seminars, or conferences sponsored by a professional organization. School is defined as having "annual participation" if school mean is greater than or equal to 2.

[1] For information concerning survey design and sample estimation of SASS, see Kaufman and Huang (1993). For information about the quality of the data in SASS, see Jabine (1994). For manuals on the use of SASS, see Gruber, Rohr, and Fondelier (1993). For an extensive report summarizing the data used in this investigation and providing an overview of SASS, see Choy et al. (1993b).

Figure 1 (cont'd)— Measures of teacher professionalization

Specialization

- *In-Field Teaching*: the school mean of the percentage of teachers' entire work assignments—their weekly class schedules—in which they taught in fields for which they had at least a minor in the field. This measure focuses only on teachers at the secondary-school level (grades 7–12). (For more detail on the measurement of out-of-field teaching, see McMillen and Bobbitt 1993; Bobbitt and McMillen 1995; Ingersoll 1995.)

Authority

- *Decisionmaking Influence of School Board, Principal, and Faculty*: on a scale of 1 = none to 6 = a great deal of influence, principals' reports of "the actual influence you think each group or person has on decisions concerning the following activities: setting discipline policy, establishing curriculum, and hiring new full-time teachers." Three groups are represented: school boards, principals themselves, and faculty. Each group or person is defined as being "influential" if the mean score for the three activities was greater than or equal to 4.5.

Compensation

- *Starting Salary*: normal yearly base salary for teachers with bachelor's degree and no experience, as reported by school administrators. This measure excludes private school teachers whose effort is contributed as a free service.

- *Maximum Salary*: normal yearly base salary for teachers at highest possible step on salary schedule, or if no salary schedule, the highest salary offered, as reported by school administrators. This measure excludes private school teachers whose effort is contributed as a free service.

- *Paid Benefits*: on a scale of 0–4, the sum of four different possible paid benefits—medical, dental, life insurance, retirement—as reported by school administrators. This measure indicates only whether a school offers a paid plan in each of the four areas; it does not account for differences in the worth or coverage of plans.

The focus of this analysis is the degree of variation in teacher professionalization across different kinds of schools. Previous research suggests that there are, in fact, important school-to-school differences in organizational design and working conditions and that these differences are related to the context of the school, its community setting, and the type of students enrolled (e.g., Pallas 1988; Rowan et al. 1991). The socioeconomic status of the school's community, in particular, has been shown to be highly related to the organizational and teaching conditions in schools (e.g., Bidwell and Quiroz 1991; Kozol 1991). Sector differences also have been the focus of a number of studies of school organization; most have concluded that private schools are far different from public schools in the way they are organized (e.g., Chubb and Moe 1990). Moreover, recent analyses have shown distinct differences in school organizational characteristics among different kinds of private schools (McLaughlin, O'Donnell, and Ries 1995; Baker, Han, and Broughman 1996).

Following this previous research, this study focuses on differences in professionalization based on school size and the level of poverty of the student populations for public schools, and the orientation or affiliation for private schools, as shown below. Data on poverty levels in private schools are not available; hence, these comparisons will not be made for the private sector. Data on professionalization for private schools, according to school size, and for public schools, comparing the 50 states, are also presented, but neither are a main focus of this analysis and, hence, are not discussed in detail in the results section.

Public Sector:

Poverty Enrollment of School—the percentage of students in each school receiving publicly funded free or reduced-price lunches

- Low: less than 15 percent
- Medium: 15 percent to 49.9 percent
- High: 50 percent or more

School Size—student enrollment

- Small: less than 300
- Medium: 300 to 599
- Large: 600 or more

Private Sector:

Orientation

- Catholic schools
- Other religious schools
- Nonsectarian schools

Results

Data on the extent to which the above-described kinds of schools exhibit the characteristics of teacher professionalization are displayed in tables 1 and 2. In this section, the results for each of the six characteristics of professionalization are discussed separately and are illustrated in the figures with representative data from the tables. Additional tables with teacher professionalization data for private schools, according to school size, and for public schools, comparing the 50 states, are included at the end of this section.

Credentials

The top rows of tables 1 and 2 and also figure 2 display data on the degree to which different types of schools used the four types of professional qualifications for hiring: full state certification in the field to be taught; completion of a state-approved teacher education program; college major/minor in the field to be taught; and passage of a teacher examination.

The data indicate that there were few differences among public schools in the use of these hiring criteria. Most public schools used three of the four criteria, about one-third used all four criteria, and very few used none of the criteria. However, public and private schools greatly differed in their use of these kinds of hiring criteria for teachers. Only 7 percent of private schools, compared to 32 percent of public schools, required all of the four criteria. In addition, only 2 percent of public schools, compared to 30 percent of private schools, required none of the four hiring criteria.

This does not mean, of course, that private schools were not selective in who they hired as teachers. These data simply indicate that private schools far less frequently used hiring criteria associated with professionals. There were, moreover, distinct differences in the use of these hiring criteria among private schools, depending upon their orientation. Catholic schools were more likely to utilize these professional hiring criteria. For example, only 10 percent of Catholic schools did not require any of the four hiring requirements examined, compared to 28 percent of nonsectarian schools and 45 percent of other religious schools. It should also be noted that many states do not require private school teachers to hold state certification.

Table 1— Means and percentages for measures of teacher professionalization, for *public* schools, by *poverty enrollment* and *size*: 1990–91

		Poverty Enrollment			School Size		
	Total Public	*Low* <15%	*Med.* 15–49%	*High* >49%	*Small* >300	*Med.* 300–599	*Large* >599
Credentials							
Mean Number Professional Hiring Requirements	2.8	2.8	2.9	2.8	2.8	2.8	2.9
% without Professional Hiring Requirements	2%	2%	2%	2%	2%	2%	2%
% with all Four Professional Hiring Requirements	32%	30%	32%	33%	31%	30%	35%
Induction							
% with Mentor Program	67%	65%	66%	71%	53%	69%	78%
Mean Effectiveness	3	3	3	3	3.1	3	2.9
% with Effective Assistance	16%	16%	15%	17%	21%	17%	9%
Professional Development							
% with Continuing Education Support	36%	40%	36%	30%	36%	36%	34%
Mean Participation in Professional Organization Activities	1.4	1.4	1.4	1.3	1.4	1.4	1.3
% with Annual Participation in Prof. Org. Activities	42%	44%	41%	39%	44%	42%	38%
Specialization							
Mean % In-field Teaching	77%	81%	76%	69%	75%	75%	79%
Authority							
% with Influential Board	42%	37%	43%	48%	41%	43%	42%
% with Influential Principal	72%	78%	74%	60%	71%	73%	71%
% with Influential Faculty	30%	36%	31%	22%	29%	31%	30%
Mean Faculty Influence	3.9	4.1	4	3.6	3.9	4	3.9
Compensation							
Mean Number Paid Benefits	3.1	3.2	3.1	3	3	3.1	3.2
% with all Four Paid Benefits	48%	54%	47%	44%	40%	51%	52%
Mean Starting Salary ($)	20,918	21,719	20,313	21,132	19,711	21,094	21,984
Mean Maximum Salary ($)	39,348	42,533	37,657	38,81?	35,317	40,279	42,421

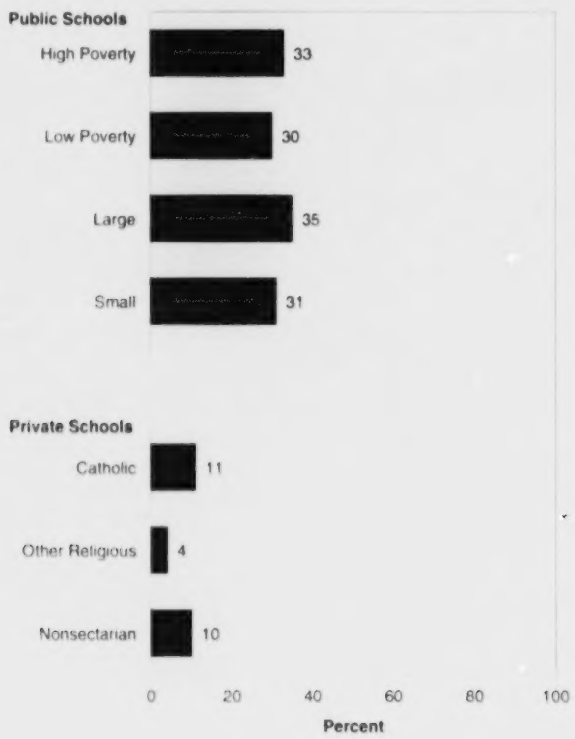
SOURCE: U.S. Department of Education, National Center for Education Statistics, 1990–91 Schools and Staffing Survey.

Table 2— **Means and percentages for measures of teacher professionalization, for *private* schools, by *orientation*: 1990–91**

	Total Private	Orientation		
		Catholic	*Other Religious*	*Nonsectarian*
Credentials				
Mean Number Professional Hiring Requirements	1.5	2	1.1	1.4
% without Professional Hiring Requirements	30%	10%	45%	28%
% with all Four Professional Hiring Requirements	7%	11%	4%	10%
Induction				
% with Mentor Program	32%	43%	23%	32%
Mean Effectiveness*	3.3	3.2	3.3	3.2
% with Effective Assistance	35%	29%	40%	37%
Professional Development				
% with Continuing Education Support	39%	32%	41%	44%
Mean Participation in Professional Organization Activities	1.2	1.3	1.1	1.2
% with Annual Participation in Prof. Org. Activities	37%	38%	35%	39%
Specialization				
Mean % In-field Teaching	56%	55%	53%	67%
Authority				
% with Influential Board	27%	13%	42%	18%
% with Influential Principal	86%	95%	77%	89%
% with Influential Faculty	34%	38%	26%	47%
Mean Faculty Influence	4.1	4.3	3.9	4.4
Compensation				
Mean Number Paid Benefits	2.1	3.0	1.6	1.8
% with all Four Paid Benefits	21%	35%	13%	16%
Mean Starting Salary ($)	14,406	14,810	12,963	16,998
Mean Maximum Salary ($)	23,719	25,243	20,704	27,807

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1990–91 Schools and Staffing Survey.

Figure 2— Percentage of schools with all four professional hiring requirements: 1990–91



SOURCE: U.S. Department of Education, National Center for Education Statistics, 1990–91 Schools and Staffing Survey.

Induction

Assistance for new or beginning teachers can be provided in any number of ways. The data in figure 3 indicate the percentage of schools that offered formal mentoring programs for beginning teachers and also the percentage of schools in which the faculty, on average, strongly agreed that assistance for new teachers was effective, whether it was from a mentoring program or another source.

In the public sector, a majority of schools offered formal mentoring programs, but in only a minority of schools did teachers strongly agree that, on average, assistance for new teachers, from either mentoring programs or other sources, was effective. Thus, the data suggest that simply offering formal mentoring programs did not guarantee that new teachers were effectively assisted in matters of discipline, instruction, and adjustment to the school environment. Indeed, the data suggest that having a formal program may have had little to do

with whether teachers reported that their schools provided effective assistance.[2] This gap between offering programs and offering effective assistance was particularly true for larger public schools. Although over three-quarters of large public schools offered mentoring programs for beginning teachers, only in one-tenth of large public schools did faculty find assistance to be effective. In contrast, small public schools were less likely than large schools to offer mentoring programs but more likely to provide effective assistance. Notably, there was little difference between high-poverty and low-poverty public schools for both of these measures.

Figure 3— Percentage of schools with a mentor program and with effective assistance for new teachers: 1990–91

NOTE: The percentage of schools with effective assistance does not represent a subset of schools with mentor programs.
SOURCE: U.S. Department of Education, National Center for Education Statistics, 1990–91 Schools and Staffing Survey.

[2] Background analysis of the data also indicated that whether or not a school had a mentor program little affected the distribution of teachers' reports of the effectiveness of assistance. In either case, in only about 20 percent of schools did the staff strongly agree that assistance was effective.

There was less of a gap in the private sector between offering a program and offering assistance deemed to be effective. Beginning teachers in private schools had less access to apprenticeship and mentoring programs than did beginning teachers in public schools, but private school faculties more often found the available assistance for new teachers to be effective. Within the private sector, however, religious schools varied in the percentage offering mentoring programs and in the perceived effectiveness of assistance. Non-Catholic religious schools were less likely to have mentor programs than were Catholic schools, but were more likely to report effectiveness in assisting new teachers.

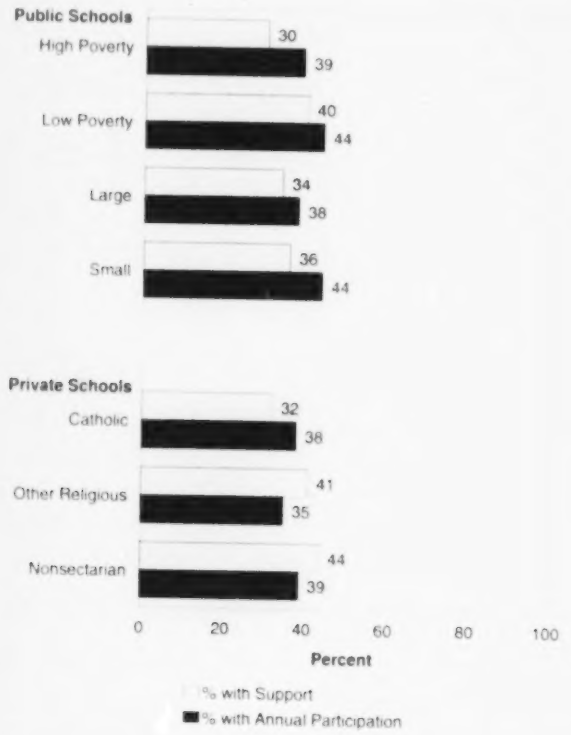
Professional Development

Data on two types of teacher professional development activities are displayed in figure 4—the percentage of schools that provided funding to support the continuing education of teachers through additional college coursework and the percentage of schools in which the faculty annually participated in activities sponsored by professional organizations.

The data indicate that it was not commonplace for schools to provide continuing education support to teachers. Only about one-third of schools provided reimbursement for teachers' tuition and course fees. There were some differences between different types of schools. For instance, 30 percent of high-poverty public schools provided reimbursement for teachers' tuition and course fees; 40 percent of low-poverty public schools covered these costs. Among private schools, Catholic schools were the least likely to have provided reimbursement for teachers (32 percent), compared to 41 percent of other religious schools and 44 percent of nonsectarian schools.

A similar pattern holds for the extent to which faculties participated in activities sponsored by professional organizations. Fewer than half of teachers reported that, on average, they attended workshops, seminars, or conferences at least annually. The degree of participation differed among schools; for example, in 42 percent of public schools compared to 37 percent of private schools (tables 1 and 2), teachers reported that they participated in activities sponsored by or associated with a professional organization at least annually. There were slight differences between large and small public schools and between high-poverty and low-poverty public schools; teachers in small schools were more likely to have annual participation than those in large public schools, and teachers in low-poverty public schools were more likely to have annual participation than those in high-poverty public schools (figure 4).

Figure 4— Percentage of schools with continuing education support and with annual participation in professional organization activities: 1990–91



SOURCE: U.S. Department of Education, National Center for Education Statistics, 1990–91 Schools and Staffing Survey.

Specialization

The measure of teacher specialization examined here—in-field teaching—focuses on the extent to which teachers taught subjects that were in their fields of expertise. Expertise is defined here at a minimal level—at least a college minor in the fields taught. The focus here is, moreover, solely on classes at the secondary level (grades 7–12). Figure 5 displays data on school means of in-field teaching—the average portion of secondary-level teachers' weekly class schedules for which they were assigned to teach in fields for which they had at least a college minor (see the Technical Notes for a detailed description of this measure).

Given the minimal definition of expertise, the data indicate that teachers were assigned to teach a substantial portion of their weekly class schedules out of their fields of expertise. In public schools, teachers, on average, spent over three-quarters of their class load teaching fields in which they had at least a college minor; private school teachers were far more often

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assigned to teach subjects out of their fields of training than were public school teachers; on average, only 56 percent of a private school teacher's schedule was in-field (tables 1 and 2).

Levels of in-field teaching differed among public schools; teachers in high-poverty schools spent less of their schedules teaching in their fields of expertise than did those in low-poverty schools (figure 5). There were also some differences among private schools. Teachers in nonsectarian private schools, for example, had higher levels of in-field teaching than did teachers in other private schools. On average, teachers in nonsectarian schools spent about two-thirds of their schedules teaching in-field; in contrast, in-field levels in religious private schools were lower—about half their class loads.

Figure 5— Percentage of secondary-school teachers' class schedules in which they taught in fields for which they had at least a college minor: 1990–91

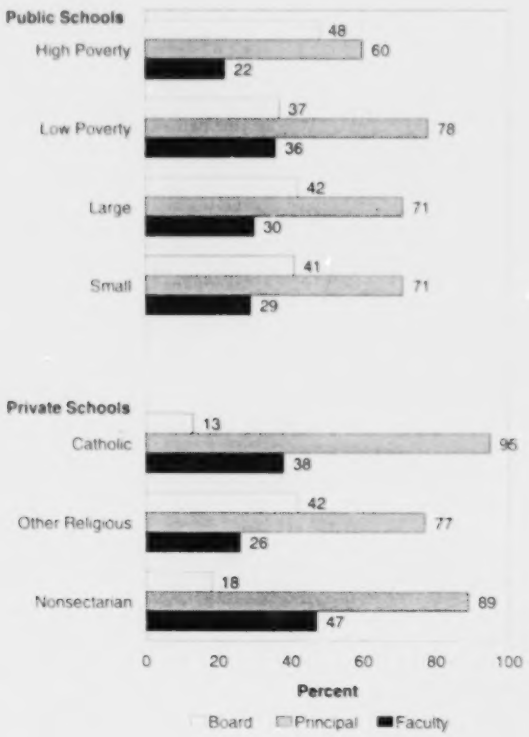
SOURCE: U.S. Department of Education, National Center for Education Statistics, 1990–91 Schools and Staffing Survey.

Authority

Figure 6 displays the frequency of schools in which principals reported the school board, the faculty, and themselves to have substantial decisionmaking influence over three key activities: curriculum, discipline, and hiring. The data show that the reported influence of teachers varied relative to that of administrators, depending on the school type and the groups compared.

At the top of the hierarchy lie principals. Overall, principals in both sectors clearly viewed themselves as powerful actors in reference to decisions concerning curriculum, discipline, and hiring in schools (tables 1 and 2). In comparison to principals, teachers appear to have had limited professional authority over these school educational decisions, at least from the viewpoint of principals. In none of the types of schools examined were faculties influential in a majority of schools. Moreover, in all school types, principals reported faculty to be influential less often than they were themselves.

Figure 6— Percentage of principals reporting groups to be influential over school decisionmaking: 1990–91



SOURCE: U.S. Department of Education, National Center for Education Statistics, 1990–91 Schools and Staffing Survey.

However, faculty influence over school decisionmaking differed across different types of schools (figure 6). Among public schools, there were distinct differences in faculty influence between high-poverty and low-poverty schools; faculty were far more often reported to be influential in the latter. Moreover, there were distinct differences within the private sector; faculty in non-Catholic religious schools were less often influential over school educational decisions than were those in other private schools.

In comparison to school boards, teachers' professional authority was mixed, depending on the school type. In high-poverty public schools and non-Catholic religious private schools, boards were more often influential than were faculties. But, in low-poverty public schools, the influence of school boards and faculties were similar. Finally, in Catholic and nonsectarian private schools, faculties were more often influential than were school boards.[3]

Compensation

Teacher salary analyses typically focus on the average salary levels of particular types of teachers or in particular jurisdictions. Comparing average teacher salaries for different kinds of teachers or schools, however, may be misleading because teacher salary levels are often standardized according to a uniform salary schedule, based on the education levels and years of experience of the teachers. Especially with an aging teacher workforce, it can be unclear whether differences in average salary levels are due to real differences in the compensation offered to comparable teachers by different schools or are due to differences in the experience and education levels of the teachers employed.[4] That is, a school with older teachers may appear to offer better salaries, when in fact they do not. A more effective method of comparison across schools is to compare the normal salaries paid by schools to teachers at common points in their careers. This analysis examines data on the normal start-of-career and end-of-career teacher salaries offered in the different kinds of schools. These data are illustrated in figure 7 and at the bottom of tables 1 and 2. Data on the number of paid benefits are also displayed.

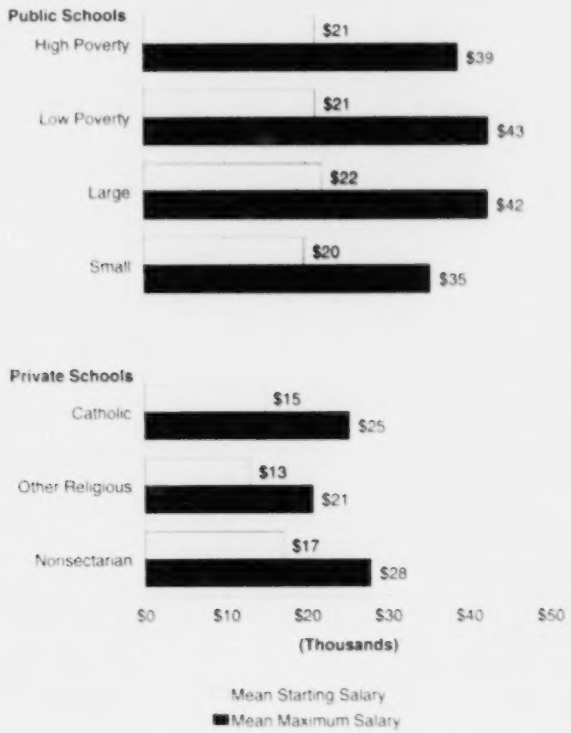
The SASS data indicate that the compensation afforded to teachers did not vary widely in public schools. For example, contrary to popular belief (e.g., Kozol 1991), the differences in teacher pay between public schools serving high-poverty communities and schools in more affluent communities were minor. But, there were wide differences between public and private schools. Teachers in private schools were paid far less than those in public schools and also received fewer benefits. For example, 48 percent of public schools provided all four of the paid benefits examined—medical, dental, life insurance, or retirement—to their teachers, compared to only 21 percent of private schools (tables 1 and 2). The mean starting salary was

[3] For a more detailed analysis of SASS data on decisionmaking influence, see Ingersoll (1994, 1996b).

[4] For a more detailed analysis of SASS data on the determinants of teacher salaries, see Chambers (1996).

about $5,000 more in public schools than in private schools ($20,918 versus $14,406). Moreover, the public-private salary gap widens as teachers progress through their careers. The average maximum salary (the highest possible step on the scale) for private school teachers was about $23,000; for public school teachers it was about $39,000. In addition, compensation differed among private school types (figure 7). Non-Catholic religious private schools paid their teachers less than did nonsectarian schools.

Figure 7— Mean teacher starting salary and mean maximum salary: 1990–91



SOURCE: U.S. Department of Education, National Center for Education Statistics, 1990–91 Schools and Staffing Survey.

In order to place teachers' salaries in perspective, it is useful to compare them to the salaries earned in other occupations. Data from SASS and the Recent College Graduates Survey show that the salaries of new college graduates who have become teachers in recent years have been considerably below those of new college graduates who chose many other occupations. For instance, the average starting salary at the end of their first year for 1990 college graduates who became teachers was over $10,000 less than the average starting salary of their classmates

who entered computer science jobs (table 3) (Rollefson 1993; Cahalan et al. 1993; Gray et al. 1993; also see Rollefson and Smith, 1995, for national data comparisons of teacher salaries with those in other occupations).

Table 3— Mean annual salaries of new bachelor degree recipients in teaching and other selected occupations: 1991

Occupation	Salary	Difference
Teaching	$19,913[1]	—
Computer Science	30,419	$10,506
Math, Physical Sciences	26,040	6,127
Business/Management	25,961	6,048
Writers/Artists	22,353	2,440
Biologists	21,325	1,412
Communications	19,584	-329
Public Affairs/Social Services	19,227	-686
All occupations	$23,632	$3,719

[1] Scheduled salary based on average contract length of 9.7 months.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1991 Recent College Graduates Survey and 1990–91 Schools and Staffing Survey (Teacher Demand and Shortage Questionnaire)

Tables 4 and 5 provide additional data on levels of teacher professionalization—for public schools, comparing the 50 states, and for private schools, according to school size. These data indicate, for example, that public school teachers in Alaska spent 63 percent of their schedules teaching in-field subjects, and the average starting salary in Alaskan public schools was about $29,700. On the other hand, the average starting salary in North Dakota public schools was about $15,800. In the private sector, secondary school teachers in small private schools spent half of their weekly course schedule teaching subjects for which they did not have at least a college minor, and the average starting salary in these schools was under $14,000.

Table 4a— Means and percentages for measures of teacher professionalization, for *public* schools, by *state*: 1990–91

	Credentials			Induction		Professional Dev.
	Mean # Prof Hire Req	*% w/out Hire Req*	*% w/ all 4 Hire Req*	*% w/ Mentor Program*	*% w/ Effect. Assistance*	*% w/ Cont Education Support*
Total Public	2.8	2%	32%	66%	16%	36%
Alabama	2.9	0	11	53	18	11
Alaska	2.0	5	0	34	10	24
Arizona	3.0	1	42	54	7	17
Arkansas	3.1	0	50	35	13	17
California	2.9	1	41	86	17	12
Colorado	3.0	0	43	46	8	20
Connecticut	2.9	0	33	94	24	37
Delaware	3.0	0	34	77	9	100
Dist. of Columbia	4.0	0	100	90	17	0
Florida	2.1	7	5	98	26	37
Georgia	2.5	4	26	83	22	48
Hawaii	4.0	0	100	73	3	0
Idaho	3.3	0	59	92	8	40
Illinois	3.0	0	38	38	8	38
Indiana	3.5	1	64	99	15	9
Iowa	2.3	4	3	31	8	35
Kansas	3.3	0	46	37	15	16
Kentucky	3.5	0	65	93	21	5
Louisiana	3.0	14	62	65	16	70
Maine	2.4	2	15	83	14	88
Maryland	2.8	0	26	71	12	96
Massachusetts	1.8	15	1	29	13	41
Michigan	2.8	1	4	48	10	32
Minnesota	3.1	0	37	60	5	13
Mississippi	3.3	0	61	49	28	14
Missouri	2.5	6	11	98	23	71
Montana	3.2	4	48	15	8	14
Nebraska	3.1	0	43	52	24	9
Nevada	2.7	0	17	41	10	2
New Hampshire	1.9	7	4	34	7	95
New Jersey	2.7	1	30	40	23	66
New Mexico	3.2	0	53	82	11	9
New York	2.8	1	33	53	9	28
North Carolina	3.2	0	47	97	22	46
North Dakota	2.7	0	1	24	9	25
Ohio	2.6	0	7	79	17	45
Oklahoma	3.3	0	55	95	26	29
Oregon	2.2	14	20	75	16	80
Pennsylvania	3.1	1	44	97	30	74
Rhode Island	3.4	0	60	34	19	15
South Carolina	3.1	0	45	76	15	82
South Dakota	2.4	2	0	53	11	21
Tennessee	3.1	1	41	77	21	17
Texas	2.9	2	41	59	15	16
Utah	2.3	1	0	88	17	13
Vermont	2.4	1	0	26	16	85
Virginia	2.6	2	29	80	19	69
Washington	2.2	2	1	80	9	35
West Virginia	3.4	0	58	61	23	54
Wisconsin	2.6	1	4	43	5	41
Wyoming	2.3	3	6	35	18	33

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1990–91 Schools and Staffing Survey.

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Table 4b— Means and percentages for measures of teacher professionalization, for *public* schools, by *state*: 1990–91

	Professional Dev.	Specialization	Authority	Compensation			
	% w/ Annual Part. in Prof. Org.	Mean % In-field Teaching	% w/ Infl. Faculty	Mean # Pd. Benefits	% w/ all 4 Paid Benefits	Mean Starting Salary	Mean Max. Salary
Total Public	42%	78%	30%	3.1	48%	$20,918	$39,348
Alabama	48	80	10	2.9	41	21,222	31,433
Alaska	34	63	26	3.5	84	29,690	55,803
Arizona	24	70	37	3.6	79	21,262	39,316
Arkansas	42	86	18	2.5	23	17,475	26,367
California	35	69	48	3.3	60	24,750	47,369
Colorado	34	77	58	3.8	88	19,621	42,482
Connecticut	61	84	36	3.2	75	26,147	52,705
Delaware	53	77	26	3.3	61	20,915	45,379
Dist. of Columbia	57	90	10	4.0	100	23,305	48,175
Florida	37	64	25	3.3	52	22,604	40,875
Georgia	15	66	12	3.0	45	21,040	42,088
Hawaii	62	70	34	4.0	100	23,969	46,641
Idaho	42	78	48	3.2	59	17,118	31,991
Illinois	33	74	28	3.2	39	19,899	38,902
Indiana	47	86	29	3.5	64	20,870	39,787
Iowa	39	87	35	3.2	40	17,899	32,366
Kansas	49	78	31	2.2	22	20,348	34,398
Kentucky	47	73	24	3.0	32	19,521	34,229
Louisiana	38	69	6	2.7	19	18,187	31,298
Maine	34	67	50	2.4	15	18,628	34,676
Maryland	43	77	11	3.6	73	23,545	47,191
Massachusetts	34	80	34	2.9	21	21,780	41,127
Michigan	46	77	37	3.6	87	22,430	45,293
Minnesota	70	90	53	3.1	52	21,384	40,049
Mississippi	35	69	14	2.1	17	18,541	32,080
Missouri	70	84	26	3.0	38	18,743	32,496
Montana	66	85	29	2.8	34	16,713	31,203
Nebraska	57	86	29	2.5	26	16,426	27,468
Nevada	31	72	31	3.5	47	21,391	42,192
New Hampshire	72	89	43	3.8	82	20,547	37,770
New Jersey	52	76	18	2.8	42	24,567	49,785
New Mexico	36	76	42	3.4	65	18,874	34,631
New York	42	80	34	3.1	25	24,570	51,530
North Carolina	38	79	21	2.7	18	20,105	38,634
North Dakota	65	88	20	2.2	5	15,833	27,023
Ohio	37	77	20	3.5	82	19,104	39,517
Oklahoma	85	78	24	2.7	31	17,661	28,515
Oregon	38	75	45	3.3	61	19,099	35,291
Pennsylvania	22	88	25	3.8	92	23,258	43,657
Rhode Island	55	85	22	3.5	71	20,864	41,810
South Carolina	34	71	22	3.2	56	19,736	40,478
South Dakota	34	81	31	3.0	28	16,299	26,357
Tennessee	54	70	18	3.2	49	19,845	33,436
Texas	25	80	24	2.3	12	19,568	33,138
Utah	55	83	41	3.1	32	17,437	33,874
Vermont	38	79	57	2.7	32	19,711	37,199
Virginia	43	74	21	3.0	30	22,944	40,296
Washington	41	74	50	3.5	66	19,994	41,818
West Virginia	17	86	12	3.4	60	18,478	32,565
Wisconsin	66	87	39	3.5	67	20,873	39,895
Wyoming	40	84	64	3.3	53	19,569	38,371

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1990–91 Schools and Staffing Survey.

Table 5— Means and percentages for measures of teacher professionalization, for *private* schools, by *size*: 1990–91

	School Size		
	Small >300	*Medium* 300–599	*Large* >599
Credentials			
Mean Number Professional Hiring Requirements	1.4	1.8	1.9
% without Professional Hiring Requirements	33%	13%	13%
% with all Four Professional Hiring Requirements	7%	9%	12%
Induction			
% with Mentor Program	28%	48%	53%
Mean Effectiveness	3.3	3.2	3.1
% with Effective Assistance	37%	31%	21%
Professional Development			
% with Continuing Education Support	36%	48%	52%
Mean Participation in Professional Organization Activities	1.2	1.3	1.3
% with Annual Participation in Prof. Org. Activities	38%	36%	35%
Specialization			
Mean % In-field Teaching	50%	63%	75%
Authority			
% with Influential Board	29%	17%	14%
% with Influential Principal	84%	93%	96%
% with Influential Faculty	33%	42%	35%
Compensation			
Mean Number Paid Benefits	1.9	2.9	3.1
% with all Four Paid Benefits	18%	32%	41%
Mean Starting Salary ($)	13,959	15,922	17,293
Mean Maximum Salary ($)	22,510	27,410	32,728

Source: U.S. Department of Education, National Center for Education Statistics, 1990–91 Schools and Staffing Survey.

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Conclusion

This analysis reveals large variations in the levels of professionalization in elementary and secondary schools in the United States. On the one hand, almost all schools exhibited some of the characteristics of professionalized workplaces. On the other hand, despite numerous reform initiatives since the early 1980s, almost all schools were lacking or fell short on a number of key aspects of professionalization in 1990–91. If we accept the common assumption that professionalization attracts capable recruits to an occupation, fosters their expertise and commitment, and, ultimately, provides assurance of quality service to the public, then these data do not yield a positive portrait of the teaching occupation.

For example, only a minority of schools used a full range of professional criteria for hiring new teachers (e.g., certification in area of specialization, substantive training in area of specialization, completion of accredited training program, passage of examination). Only a minority of schools provided assistance to new teachers that teaching staffs, on average, strongly agreed was effective. Only a minority of schools provided financial reimbursement for continuing education tuition and fees. Only a minority of schools had faculties that participated in professional organization activities at least once per year. In most schools, teachers were assigned a substantial portion of their class schedules to teach subjects for which they had little training. In few schools did principals report their faculties to have as much decisionmaking influence over key educational issues as they themselves had. Only a minority of schools provided a full range of paid benefits (medical, dental, life insurance, retirement). Finally, starting salaries for teachers in most schools were lower than those in many other occupations requiring a college degree.

However, the degree of teacher professionalization varied, depending on the type of school. For instance, high-poverty public schools were less professionalized than public schools in more affluent communities in several ways, most notably, in professional development activities and their degree of faculty decisionmaking influence. Moreover, large public schools were slightly more professionalized than small public schools in several ways, including salary levels and paid benefits. On the other hand, large public schools were slightly less professionalized than small public schools in other ways, including assistance for newcomers and participation in professional development programs.

However, among the most striking differences were those found between public and private schools. The teaching job in private schools is in many ways far less professionalized than in public schools. Among the most professionalized were public schools in more affluent

communities; non-Catholic religious private schools were among the least professionalized of all schools. Public schools were more likely than private schools to use a full range of professional hiring requirements (e.g., certification in area of specialization, substantive training in area of specialization, completion of accredited training program, passage of examination). Public school teachers were assigned a smaller portion of their class schedules to teach subjects for which they did not have at least a college minor. Public schools more often provided a full range of paid benefits (medical, dental, life insurance, retirement), and starting and end-of-career teacher salaries were higher for public school teachers than for private school teachers. On the other hand, teachers in private schools were more likely to report that assistance to new teachers was effective. Moreover, private school principals more often reported their faculties to have substantial decisionmaking influence over key educational issues.

Implications

These findings suggest several important implications for contemporary education research and policy.

Teacher Credentials

Over the past decade, a great deal of interest has focused on upgrading the education, preparation, and training requirements for teachers (National Commission on Excellence in Education 1983). There is almost universal agreement that one of the most important characteristics of a quality teacher is training. Research has shown moderate but consistent support for the reasonable proposition that subject knowledge (knowing what to teach) and teaching skills (knowing how to teach) are important predictors of both teaching quality and student learning (for reviews of this research, see Darling-Hammond and Hudson 1990). Knowledge of subject matter and of pedagogical methods do not, of course, guarantee qualified teachers nor quality teaching, but they are necessary prerequisites. In this view, efforts to tighten entry-level standards for newly hired teachers, and efforts to insure that teachers only teach subjects for which they have minimal training, would help insure that teachers possess expertise over the bodies of knowledge they will teach (Darling-Hammond 1984). These data clearly show, however, that many schools do not make extensive use of professional hiring requirements and that in many schools, teachers teach out of their fields of training.

The Problems and Prospects of Beginning Teachers

The problems confronting new teachers in their jobs are of great interest in current education research. Researchers have consistently shown that new teachers leave the occupation at very high rates. As a result, policymakers have advocated a range of reform efforts, such as mentoring, apprenticeship, and induction programs, designed to aid new teachers and cut down on their high attrition rates (e.g., Bobbitt et al. 1994; Sclan 1993; Murnane et al. 1992).

But, the importance attached to improved induction for new teachers has not, as of yet, resulted in the prevalence of effective programs in schools. This analysis shows that while a majority of schools offered formal mentoring programs, in only a minority of schools did teachers strongly agree that assistance for new teachers, from either mentoring programs or other sources, was effective. This finding suggests the importance of conducting further research on what distinguishes effective from ineffective induction and assistance programs.

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Power, Authority, and Decisionmaking in Schools

The distribution of power, authority, and control in schools is one of the most important issues in contemporary education research and policy. Indeed, this issue lies at the crux of many current reforms—teacher empowerment, site-based management, and related forms of school decentralization. But, although the importance of the distribution of power in school systems has become increasingly recognized among both education researchers and policymakers, this has not resulted in the prevalence of high levels of teacher empowerment in schools. The results show, for example, that in few schools did principals report their faculties to have as much decisionmaking authority and influence over key educational issues as they themselves had. This finding raises questions about how much delegation of decisionmaking to teachers has actually occurred in recent years, and why.

Comparing Public and Private Schools

Over the past decade, interest has surged among both education researchers and policymakers in comparing public and private elementary and secondary schools in the United States. Numerous researchers, for instance, have sought to carefully isolate key differences between public and private schools and to explore what impact these differences have on student outcomes (e.g., Coleman and Hoffer 1987; Bryk et al. 1994; Chubb and Moe 1990). The primary emphasis of much of this research has been to separate out the effects of schools, student characteristics, and family background on student performance. Although highly contested, many have come to the conclusion that, in important ways, private schools are distinctly different from public schools and, in general, are better places for student growth and learning.

The results of this analysis raise questions for this view. Clearly, there could be serious concerns with employment in private schools from the teacher's viewpoint, which suggests the need for research on the advantages and disadvantages of the teaching job in public and private schools.

Technical Notes

The Schools and Staffing Survey

The primary data source for this report is the 1990–91 Schools and Staffing Survey (SASS), a nationally representative survey of teachers, principals, and schools conducted by the U.S. Department of Education's National Center for Education Statistics (NCES). The U.S. Census Bureau collected the SASS data for NCES in 1991 using a mail survey with telephone followup. The objective of SASS was to obtain information on the staffing, occupational, and organizational characteristics of schools in the United States.

Sample Selection[5]

Schools were the primary sampling unit for SASS. Each selected school received a School Questionnaire and an Administrator Questionnaire. Next, a sample of teachers was selected within each school, and each received a Teacher Questionnaire. A Teacher Demand and Shortage (TDS) Questionnaire was sent to the local education agency (LEA) associated with each selected public school. Also, an additional sample of public school districts not associated with the sampled schools received the TDS Questionnaire. The Private School Questionnaire included TDS questions for the school. The original sample for SASS conducted during the 1990–91 school year included 12,856 schools and administrators, 65,217 teachers, and 5,515 local education agencies. The response rates are discussed below.

SASS was designed to provide national estimates for public and private schools; state estimates for public schools; state elementary, state secondary, and national combined estimates for public schools; affiliation- and grade-level estimates for private schools; estimates of change from 1988 to 1991 in school-level characteristics; and national estimates for schools with greater than 25 percent Indian enrollment. The teacher survey was designed to support comparisons between new and experienced teachers. Comparisons between bilingual and nonbilingual teachers are possible at the national level.

[5] For a detailed description of the sample design of the 1990–91 SASS, see Kaufman and Huang (1993).

Selection of Schools

The public school sample of 9,586 schools was selected primarily from the 1988–89 school year Common Core of Data (CCD) file. The CCD is based on survey data collected annually by NCES from all state education agencies and is believed to be the most complete list of public schools available. The frame includes regular public schools, Department of Defense operated military base schools, and nonregular schools such as special education, vocational, and alternative schools.

The private school sample of 3,270 schools was selected from two sampling frames, a list frame and an area frame. The 1989–90 Private School Survey (PSS) list frame was based on the 1989 Quality of Education Data (QED) private school list, updated with 20 private school association lists provided to the Census Bureau in the spring of 1989.

To improve private school coverage, an area frame of schools was developed consisting of 123 sampling units (PSUs) selected with probability proportional to the square root of the PSU population. Within each PSU, a telephone search was conducted to find all in-scope private schools. Sources included yellow pages, religious institutions (except for Roman Catholic religious institutions, because each Catholic diocese is contacted annually when the QED list is updated), local education agencies, chambers of commerce, and local government offices. PSU schools not on the QED file nor the lists from private school associations were listed in the area school frame. From the frame, additional schools were eligible to be selected for the SASS private school sample.

The private school sample was designed to support estimates at the national and affiliation levels. The affiliation groups for private schools were determined by the school's orientation or affiliation group listed on the 1988–89 Private Schools Survey (the list frame).

Selection of LEAs

All LEAs that had at least one school selected for the school sample were included in the LEA sample for the TDS Questionnaire. Each Bureau of Indian Affairs and Department of Defense school was defined to be an LEA. Some LEAs did not have schools, but hired teachers who taught in schools in other LEAs. To ensure representation of these teachers, a sample of 135 LEAs without eligible schools was selected. Only 14 of the 135 were actually in scope, that is, were an operating public school agency that reported hiring teachers. (LEAs without schools were not included in this analysis). All LEAs in Delaware, Nevada, and West Virginia were included to reduce high standard errors in these states. The total LEA sample was 5,515.

Selection of Teachers

All 56,051 public and 9,166 private school teachers in the teacher samples were selected from the sampled public and private schools. The average number of teachers selected per school was 3.49, 6.98, and 5.23 teachers for public elementary, secondary, and combined schools,

respectively, and 3.78, 4.72, and 2.83 teachers for private elementary, secondary, and combined schools, respectively.

Data Collection

The data were collected for NCES by the U.S. Bureau of the Census. Questionnaires were mailed to school districts and administrators in December 1990 and to schools and teachers in January and February 1991.[6] Six weeks later, a second questionnaire was sent to each nonrespondent. A telephone follow-up of nonrespondents was conducted between March and June.

Weighting

Weights of the sample units were developed to produce national and state estimates for public schools, teachers, administrators, and LEAs. The private-sector data were weighted to produce national estimates and affiliation group estimates. The basic weights were the inverse of the probability of selection, and were adjusted for nonresponse and also to adjust the sample totals (based on responding, nonresponding, and out-of-scope cases) to the frame totals in order to reduce sampling variability.

Response Rates and Imputation

The final weighted questionnaire response rates were as follows:

	Public	Private
Teacher Demand and Shortage	93.5	—
Administrator	96.7	90.0
School	95.3	83.9
Teacher*	90.3	84.3

— not applicable

*The response rates for public school teachers do not include the 5 percent of the public schools that did not provide teacher lists, and the response rates for private school teachers do not include the 11 percent of the private schools that did not provide teacher lists. The effective response rate for public schools was 85.8 percent and for private schools, 75.9 percent.

Values were imputed for items with missing data by: (1) using data from other items on the questionnaire or a related component of the SASS (a school record to impute district data, for

[6] Copies of the questionnaires may be obtained by writing to the address given at the end of this section.

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example); (2) extracting data from the sample file, such as the CCD or PSS; or (3) extracting data from a respondent with similar characteristics.[7]

Standard Errors

The data in this report are based on samples and, hence, are subject to sampling variability. In order to make proper inferences about the larger population which the samples represent, the accuracy of all statistics and estimates in this report were checked. All comparisons discussed in the text were tested for statistical significance using the Student's t statistic at an alpha level of .05. Whenever comparisons were multiple, the Bonferroni procedure was used to adjust the alpha level for the t tests.

Standard errors were calculated to indicate the accuracy of each estimate in the tables. If all possible samples of the same size were surveyed under the same conditions, an interval of 1.96 standard error units below to 1.96 standard error units above a particular statistic would include the universe value in approximately 95 percent of the cases. Note, however, that the standard errors do not take into account the effect of biases due to item nonresponse, measurement error, data processing error, or other possible systematic error.

Standard errors were calculated using a balanced repeated replications procedure. Because this procedure incorporates the design features of complex sample surveys, the standard errors are generally higher than those calculated under the assumptions of simple random sampling. Standard errors for selected tables are presented in Appendix A.

Information on Variables

Poverty Enrollment of School

The measure of poverty used in the analysis is the proportion of a school's student population that received the publicly funded free or reduced-price lunch program. The proportion of free-lunch recipients is a standard measure of poverty level in school populations because almost all public schools participate in the program. But, it must be interpreted with some caution. The number of children reported to be recipients may be an underestimate, because not all children who are eligible may identify themselves as such (especially at the secondary level). Note that this measure is not available for private schools.

[7] For a detailed description of the imputation procedures in the 1990–91 SASS, see Kaufman and Huang (1993), pp. 60–87.

In-Field Teaching

The measure of in-field teaching used in the analysis is drawn from earlier work sponsored by NCES that developed and compared a range of different measures of the extent of in- and out-of-field teaching (see McMillen and Bobbitt 1993; Bobbitt and McMillen 1995; Ingersoll 1995). This analysis uses the school mean of the percentage of teachers' entire work assignments—their weekly class schedules—in which they taught in fields for which they had at least a college minor. This particular measure focuses on the extent to which teachers had minimal substantive training in broadly defined fields at the secondary level. These features are described below.

This measure of in-field teaching focuses on *minimal levels* of background preparation in broadly defined fields. The analysis defines adequate training not as a college major but as a college minor, which often requires passing as few as four undergraduate courses in a field. Hence, this measure is conservative and may, in fact, *understate* the level and degree of underqualified or out-of-field teaching. This is intentional. Rather than enter the debate as to what constitutes a qualified teacher, quality teacher training, or quality teaching, this analysis presents data on the portion of teachers' classes for which they had basic prerequisites in the fields. The underlying premise is that even a moderate portion of teachers' schedules lacking such minimal training prerequisites is a strong indication of a lack of teacher professionalization.

Adequate training is defined in terms of *substantive background*. The measure of in-field teaching indicates how many classes were taught by teachers who had at least a college minor in the subject field, regardless of whether they were certified or not. This includes both education majors and minors and academic arts majors and minors. Hence, a teacher with a bachelor's degree in mathematics education or with a minor in mathematics who was teaching mathematics is defined as in-field. It should be noted that many teachers held multiple degrees, and many held multiple majors and minors; hence, many met minimal prerequisites in more than one field. It should also be noted that these measures do not account for informal training or life experiences that may have imparted substantive knowledge to teachers.

Fields are *broadly defined* in this analysis. The range of both class subjects and college major/minors are categorized into eight fields parallel to conventional departmental divisions in high schools: mathematics, science, social studies, English/language arts, foreign languages, vocational education, arts/music, and physical education. Hence, a teacher with a college degree in economics who is assigned to teach history is considered in-field; both are within the field of social studies. Likewise, a teacher with a minor in biology but teaching chemistry is also defined as in-field; both are within the field of science. (The categorization of disciplines and subjects into eight fields of training and eight fields of teaching assignments are listed below.)

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This analysis focuses solely on teachers who taught students at the *secondary-school level* (grades 7–12), regardless of whether the school was actually a middle school, junior high school, a senior high school, a secondary school, or a combined school. Furthermore, it solely focuses on those who taught departmentalized courses in the eight fields. This includes special education teachers to the extent that they taught departmentalized courses in the eight fields. But, 7th or 8th grade teachers or special education teachers teaching multiple subjects in self-contained classes were excluded. Likewise, the nondepartmentalized and non-7–12th grade portions of the schedules of teachers in combined schools or middle schools were excluded.

For several reasons, the argument for in-field and against out-of-field teaching is especially unambiguous for the secondary-school level. First, at the secondary-school level, teachers are divided by fields into departments; faculties are thus more specialized than in elementary schools, and therefore the differences between fields are more distinct and, perhaps, greater. Moreover, the level of mastery in different subjects is higher at the secondary-school level, and therefore a clear case has been made by policy analysts and researchers that teachers ought to have adequate background in the subjects they teach (e.g., Ingersoll 1995).

SASS Questionnaire Items Used in the Measures of Teacher Professionalization

Credentials

- *Professional Hiring Requirements:*

  TDS Questionnaire (question # 23) and Private School Questionnaire (question # 58)
  Items: DISTEST, STABASIC, STASUBJ, NTEPASS, FULLCERT, TEACHED, MAJORFLD.

Induction

- *Mentor Program:*

  Public School Questionnaire (question # 35) and Private School Questionnaire (question # 55)
  Item: MENTOR.

- *Effective Assistance:*

  Public and Private Teacher Questionnaires (question # 37)
  Items: TSC237 – TSC240.

Professional Development

- *Continuing Education Support:*

  TDS Questionnaire (question # 13) and Private School Questionnaire (question # 53)
  Item: TUITION.

- *Participation in Professional Organization Activities:*

  Public and Private Teacher Questionnaires (question # 27)
  Items: TSC108, TSC109.

Specialization

- *% Class Schedule In-Field:* for a detailed discussion, see above section and Ingersoll (1995).

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Authority

- *Decisionmaking Influence of School Board, Principal, and Faculty:*

  Public and Private Administrator Questionnaires (question # 15)
  Items: TEACURRC, TEAHIRNG, TEADISPL, PRNCURRC, PRNHIRNG, PRNDISPL, BRDCURRC, BRDHIRNG, BRDDISPL.

Compensation

- *Starting Salary, Maximum Salary:*

  TDS Questionnaire (questions # 15–17) and Private School Questionnaire (questions # 46–48)
  Items: SALSCHED, MINBACH, HIGHSAL, MAXSALRY.

- *Paid Benefits:*
  TDS Questionnaire (questions # 13, 24) and Private School Questionnaire (questions # 53, 56)
  Items: RETIREMT, MEDICAL, DENTAL, LIFE.

Definitions of Fields for Calculating the Measure of In-Field Teaching

Field	Teacher Training (Major/Minor)	Teaching Assignments
art/music	art, fine & applied	arts and crafts
	art education	filmmaking/photography
	drama/theater	chorus
	music	band
	music education	drama/theater/dance
		music
		other visual
physical education	health profession	health
	physical education/health	physical education
foreign language	foreign language educ.	French
	French	German
	German	Latin
	Latin	Russian
	Russian	Spanish
	Spanish	Other foreign language
	other foreign language	
vocational education	agric., natural res.	agriculture
	agriculture education	business, marketing
	architecture & environmental design	industrial arts
	business & management	health occupation
	business, commerce & distributive education	vocational home economics
		trade and industry
	communication & journalism	technical
	engineering	accounting/bookkeeping
	health profession	shorthand
	home economics	typing
	home economics education	career education
	industrial arts	other vocational education
	health/physical education	

Field	Teacher Training (Major/Minor)	Teaching Assignments
social studies	psychology	social studies
	public affairs & services	history
	social studies/social science education	world civilization
	economics	political science/government
	history	geography
	political science	economics
	sociology	civics
	other social sciences	sociology/social organization
	other area, ethnic studies	other social science
		psychology
science	science education	general science
	biology	biology/life science
	chemistry	chemistry
	earth science/geology	physics
	physics	geology/earth
	other natural sciences	science/space science
		other physical science
		other natural science
English	communications & journalism	literature
	English/language arts	composition/journalism/ creative writing
	English education	reading
	literature	other English/language arts course
	reading education	
mathematics	engineering	general mathematics
	mathematics	business math
	mathematics education	algebra, elementary
		algebra, intermediate
		algebra, advanced
		geometry, plane/solid
		trigonometry
		analytical geometry
		probability/statistics
		calculus
		other mathematics

Comments and More Information

SASS and TFS data on CD-ROM with Electronic Codebooks, as well as user's manuals, are available (free single copies) from the National Data Resource Center at 703–845–3151 (fax: 703–820–7465).

Special requests for data tapes of the SASS and TFS data may be made to NCES at the address listed below.

Schools and Staffing Survey
Elementary and Secondary Education Statistics Division
National Center for Education Statistics
555 New Jersey Avenue, NW
Washington, D.C. 20208-5653

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Appendix A
Standard Errors

Table A.1— Standard errors for table 1: Means and percentages for measures of teacher professionalization, for *public* schools, by *poverty enrollment* and *size*: 1990–91

	Total Public	Poverty Enrollment: *Low* <15%	*Med.* 15–49%	*High* >49%	School Size: *Small* >300	*Med.* 300–599	*Large* >599
Credentials							
% without Professional Hiring Requirements	0.2	0.3	0.3	0.2	0.4	0.2	0.3
% with all Four Professional Hiring Requirements	0.7	1.2	0.9	1.3	1.4	1.1	1.1
Induction							
% with Mentor Program	0.7	1.4	1.0	1.4	1.5	1.0	1.0
% with Effective Assistance	0.6	0.9	0.8	1.3	1.2	1.2	0.8
Professional Development							
% with Continuing Education Support	0.5	1.2	0.7	1.2	1.2	1.1	1.1
% with Annual Participation in Prof. Org. Activities	0.8	1.4	1.2	1.3	1.7	1.2	1.3
Specialization							
Mean % In-field Teaching	0.7	0.8	1.0	1.8	1.2	1.3	0.8
Authority							
% with Influential Board	0.7	1.3	0.9	1.7	1.4	1.2	1.1
% with Influential Principal	0.6	1.3	0.8	1.3	1.3	0.9	1.1
% with Influential Faculty	0.6	1.5	0.8	1.2	1.1	1.1	1.0
Compensation							
Mean Number Paid Benefits	0.01	0.03	0.02	0.03	0.03	0.03	0.02
% with all Four Paid Benefits	0.6	1.4	0.9	1.4	1.4	1.0	0.8
Mean Starting Salary ($)	34.0	74.7	54.8	82.6	83.8	54.8	74.7
Mean Maximum Salary ($)	74.7	211.5	140.5	208.3	178.6	133.6	162.3

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1990–91 Schools and Staffing Survey.

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Table A.2— Standard errors for table 2: Means and percentages for measures of teacher professionalization, for *private* schools, by *orientation*: 1990–91

	Total Private	Orientation		
		Catholic	*Other Religious*	*Nonsectarian*
Credentials				
% without Professional Hiring Requirements	1.3	1.7	2.1	2.1
% with all Four Professional Hiring Requirements	0.7	1.2	0.6	1.8
Induction				
% with Mentor Program	1.4	1.7	2.0	3.0
% with Effective Assistance	1.7	2.3	2.5	3.9
Professional Development				
% with Continuing Education Support	1.3	1.5	2.0	3.5
% with Annual Participation in Prof. Org. Activities	1.6	2.1	2.6	2.9
Specialization				
Mean % In-field Teaching	1.6	2.1	2.7	4.5
Authority				
% with Influential Board	1.3	1.6	2.4	2.1
% with Influential Principal	1.1	1.0	2.1	2.2
% with Influential Faculty	1.2	1.9	1.7	3.3
Compensation				
Mean Number Paid Benefits	0.04	0.03	0.06	0.08
% with all Four Paid Benefits	0.9	1.8	1.0	2.1
Mean Starting Salary ($)	145.4	91.2	216.4	331.0
Mean Maximum Salary ($)	218.4	190.8	330.0	544.8

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1990–91 Schools and Staffing Survey.

Table A.3a— Standard errors for table 4a: Means and percentages for measures of teacher professionalization, for *public* schools, by state: 1990–91

	Credentials			Induction		Professional Dev.
	Mean # Prof Hire Req	*% w/out Hire Req*	*% w/ all 4 Hire Req*	*% w/ Mentor Program*	*% w/ Effect Assistance*	*% w/ Cont Education Support*
Total Public	0.0	0.2	0.7	0.7	0.6	0.5
Alabama	0.1	0.0	2.9	3.4	3.8	1.7
Alaska	0.1	1.6	0.0	3.6	3.1	3.3
Arizona	0.1	0.9	3.4	4.6	2.5	3.0
Arkansas	0.1	0.0	4.3	4.4	3.0	3.5
California	0.1	0.6	4.0	2.6	3.6	2.5
Colorado	0.1	0.0	3.1	4.1	2.2	2.4
Connecticut	0.1	0.0	4.3	2.5	4.0	3.1
Delaware	0.1	0.0	4.4	5.2	3.9	0.0
Dist. of Columbia	0.0	0.0	0.0	3.4	5.8	0.0
Florida	0.0	1.3	0.9	0.8	3.8	2.2
Georgia	0.1	1.7	3.3	3.1	4.6	3.8
Hawaii	0.0	0.0	0.0	4.9	1.9	0.0
Idaho	0.1	0.0	4.2	1.8	2.6	4.3
Illinois	0.1	0.3	3.6	3.9	2.6	3.3
Indiana	0.1	1.1	4.2	1.1	3.3	1.7
Iowa	0.1	1.9	1.1	5.4	2.4	4.9
Kansas	0.1	0.4	5.1	4.8	3.5	3.5
Kentucky	0.0	0.0	3.1	2.2	4.6	1.6
Louisiana	0.1	2.4	3.8	3.6	3.0	2.6
Maine	0.1	0.5	4.0	4.4	4.5	3.0
Maryland	0.1	0.0	2.6	4.5	3.7	2.2
Massachusetts	0.1	2.6	1.1	5.3	3.6	3.4
Michigan	0.1	0.8	2.2	4.4	3.1	4.7
Minnesota	0.1	0.0	3.8	3.8	1.8	3.0
Mississippi	0.1	0.0	3.8	3.6	3.8	2.1
Missouri	0.1	2.1	3.0	1.3	3.2	3.5
Montana	0.1	1.4	4.7	2.9	3.1	3.6
Nebraska	0.1	0.0	5.8	5.8	5.5	2.5
Nevada	0.1	0.0	3.4	4.5	3.2	1.4
New Hampshire	0.1	2.6	1.0	4.5	2.8	2.5
New Jersey	0.1	0.6	4.7	4.7	4.2	3.8
New Mexico	0.1	0.0	4.7	3.0	3.7	1.9
New York	0.1	0.4	5.5	4.5	3.7	3.4
North Carolina	0.1	0.0	4.6	1.2	3.9	4.6
North Dakota	0.1	0.0	0.9	3.8	2.8	4.3
Ohio	0.1	0.1	2.0	3.4	3.8	3.9
Oklahoma	0.1	0.5	3.3	0.8	3.6	2.9
Oregon	0.1	1.8	3.8	4.2	4.0	3.0
Pennsylvania	0.1	0.4	4.4	1.9	3.7	2.6
Rhode Island	0.1	0.0	3.3	4.0	4.5	2.6
South Carolina	0.1	0.0	4.1	3.6	3.7	3.4
South Dakota	0.1	1.2	0.0	3.9	3.1	4.2
Tennessee	0.1	1.1	3.6	4.3	4.0	3.1
Texas	0.1	0.8	3.1	2.9	2.5	2.1
Utah	0.1	1.2	0.5	3.1	3.0	1.9
Vermont	0.1	0.8	0.0	4.7	3.8	3.3
Virginia	0.1	1.4	4.1	2.7	4.6	4.0
Washington	0.1	1.0	0.9	3.3	1.9	3.7
West Virginia	0.1	0.0	3.5	4.5	3.3	4.0
Wisconsin	0.1	0.8	2.3	3.8	2.3	4.8
Wyoming	0.1	1.2	2.8	5.6	5.6	4.1

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1990–91 Schools and Staffing Survey.

Table A.3b— Standard errors for table 4b: Means and percentages for measures of teacher professionalization, for *public* schools, by state: 1990–91

	Professional Dev.	Specialization	Authority	Compensation			
	% *w/ Annual Part. in Prof. Org.*	Mean % *In-field Teaching*	% *w/ Infl. Faculty*	Mean # *Pd. Benefits*	% *w/ all 4 Paid Benefits*	Mean Starting *Salary*	Mean *Max. Salary*
Total Public	0.8	0.7	0.6	0.0	0.6	34.0	74.7
Alabama	4.0	2.9	2.0	0.1	4.3	61.3	172.1
Alaska	3.7	3.3	3.4	0.1	2.2	166.0	306.0
Arizona	2.9	3.6	5.1	0.1	3.2	207.9	537.2
Arkansas	4.6	1.9	3.5	0.1	2.6	112.1	254.7
California	4.0	3.1	3.4	0.1	2.8	163.7	284.3
Colorado	3.8	4.2	4.5	0.0	2.5	69.1	310.6
Connecticut	5.3	4.2	4.0	0.1	3.9	140.9	323.5
Delaware	6.7	4.9	6.1	0.1	4.4	118.5	268.1
Dist. of Columbia	6.9	6.4	4.1	0.0	0.0	0.0	0.0
Florida	3.7	3.3	3.2	0.0	2.1	96.4	286.4
Georgia	3.8	5.2	2.6	0.1	3.4	111.4	225.9
Hawaii	5.9	4.1	4.3	0.0	0.0	0.0	0.0
Idaho	4.4	3.1	4.0	0.1	3.7	68.3	175.8
Illinois	4.4	3.9	3.4	0.1	3.5	134.5	446.3
Indiana	5.7	2.0	3.8	0.1	3.1	115.0	245.7
Iowa	4.5	2.8	5.1	0.1	4.8	93.2	321.2
Kansas	3.8	4.2	3.6	0.1	2.5	115.2	291.6
Kentucky	4.9	4.8	4.1	0.1	4.7	59.3	137.2
Louisiana	3.7	4.1	1.6	0.1	2.1	105.9	197.0
Maine	4.5	3.7	5.2	0.1	3.4	89.1	315.7
Maryland	5.6	3.3	3.6	0.1	2.6	56.4	221.5
Massachusetts	5.3	3.6	4.6	0.1	3.3	180.4	332.8
Michigan	4.3	3.3	4.3	0.1	3.9	158.1	427.1
Minnesota	5.0	2.7	3.8	0.1	4.2	111.6	382.0
Mississippi	3.3	3.4	2.8	0.1	3.0	28.9	73.2
Missouri	4.5	2.1	3.5	0.1	3.2	119.1	376.0
Montana	3.7	2.4	4.0	0.1	3.7	162.3	550.0
Nebraska	5.3	5.0	4.3	0.1	3.1	212.9	748.5
Nevada	5.6	5.7	4.8	0.0	3.5	85.5	150.9
New Hampshire	4.5	3.2	4.0	0.1	4.2	141.5	479.6
New Jersey	4.8	4.6	2.4	0.1	4.3	166.9	622.4
New Mexico	5.9	3.6	5.0	0.1	3.6	107.0	186.2
New York	4.6	4.1	4.2	0.1	3.1	216.7	651.2
North Carolina	5.0	3.8	4.0	0.1	3.6	43.9	256.7
North Dakota	4.1	2.5	3.4	0.1	1.3	70.3	514.0
Ohio	3.8	3.9	3.2	0.1	3.7	118.5	357.6
Oklahoma	2.7	2.9	3.5	0.1	2.8	69.0	243.5
Oregon	4.9	4.2	4.2	0.1	4.7	136.1	560.2
Pennsylvania	4.0	1.7	4.0	0.1	2.2	198.1	444.1
Rhode Island	6.6	4.4	4.4	0.1	2.8	69.9	195.6
South Carolina	3.7	2.5	3.7	0.1	3.7	54.1	205.6
South Dakota	3.7	2.7	4.1	0.1	3.3	73.5	351.4
Tennessee	4.9	3.8	3.7	0.1	2.9	58.3	284.7
Texas	2.8	2.6	2.1	0.1	1.8	77.1	143.3
Utah	4.1	2.0	4.4	0.1	2.9	36.6	151.5
Vermont	5.5	4.5	5.1	0.1	4.5	166.4	531.8
Virginia	5.2	4.3	4.1	0.1	3.8	117.9	520.9
Washington	5.4	2.9	4.8	0.1	4.4	14.6	295.1
West Virginia	3.1	2.5	2.8	0.1	4.3	36.8	74.5
Wisconsin	4.0	3.0	4.2	0.1	4.2	97.4	254.4
Wyoming	5.3	2.3	5.2	0.1	5.6	59.7	382.3

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1990–91 Schools and Staffing Survey.

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Appendix B
Additional Resources on the Schools and Staffing Survey

Additional Resources on the Schools and Staffing Survey (SASS)

SASS Data Products

The following SASS data products may be obtained free of charge while supplies last from:

U.S. Department of Education
National Center for Education Statistics
SASS Data Products
555 New Jersey Avenue, NW, Room 422
Washington, D.C. 20208-5651

Reports

- Out-of-Field Teaching and Educational Equality (NCES 96–040)
- Schools and Staffing in the United States: A Statistical Profile: 1993–94 (NCES 96–124)
- Private School Universe Survey, 1993–94 (NCES 96–143)
- SASS by State, 1993–94 Schools and Staffing Survey: Selected State Results (NCES 96–312)
- How Different? How Similar?: Comparing Key Organizational Qualities of American Public and Private Secondary Schools (NCES 96–322)
- Schools and Staffing in the United States: Selected Data for Public and Private Schools, 1993-94 (E.D. Tab, NCES 95-191)
- Private Schools in the United States: A Statistical Profile, 1990–91 (NCES 95–330)
- Teacher Supply in the U.S.: Sources of Newly Hired Teachers in Public and Private Schools, 1988–1991 (NCES 95–348)

- Characteristics of American Indian and Alaska Native Education, Results from the 1990–91 SASS (NCES 95–735)
- Teacher Supply, Teacher Qualifications and Teacher Turnover, Aspects of Teacher Supply and Demand in the U.S., 1990–91 (NCES 95–744)
- The Patterns of Teacher Compensation (NCES 95–829)
- Characteristics of Stayers, Movers, and Leavers: Results from the Teacher Followup Survey, 1991-92 (E.D. Tab, NCES 94-337)
- SASS by State (NCES 94-343)
- Private School Universe Survey, 1991-92 (NCES 94-350)
- Qualifications of the Public School Teacher Workforce: 1988 and 1991 (NCES 94–665)
- America's Teachers: Profile of a Profession (NCES 93-025)
- Private School Universe Survey, 1989-90 (NCES 93-122)
- Selected Tables on Teacher Supply and Demand (E.D. Tab, NCES 93-141)
- Schools and Staffing in the United States: A Statistical Profile, 1990-91 (NCES 93-146)
- Schools and Staffing in the United States: Selected Data for Public and Private Schools, 1990-91 (E.D. Tab, NCES 93-453)
- Schools and Staffing in the United States: A Statistical Profile, 1987-88 (NCES 92-120)
- Characteristics of Stayers, Movers, and Leavers: Results from the Teacher Followup Survey, 1988-89 (E.D. Tab, NCES 91-128)

Forthcoming Reports

- Characteristics of American Indian and Alaska Native Education, Results from the 1993–94 SASS
- America's Teachers: Profile of a Profession, 1993–94
- The Status of Teaching as a Profession, 1990–91
- The Effects of Professionalization on Teachers: A Multi-Level Analysis, 1990–91

- Time Spent Teaching Core Academic Subjects in Elementary Schools: Comparisons Across Community School, Teacher, and Student Characteristics
- Job Satisfaction Among America's Teachers: Effects of Workplace, Conditions, Background Characteristics, and Teacher Compensation, 1993–94
- A Profile of Administration Policies and Practices for Limited English Proficiency Students: Screening Methods, Teacher Training, and Program Support, 1993–94
- Private Schools in the United States: A Statistical Profile, 1993–94
- Sources of Newly Hired Teachers in Public and Private Schools, 1988–94
- Characteristics of Students' Programs: Results from Their Student Records, 1993–94
- Characteristics of Stayers, Movers, and Leavers: Results from the Teacher Followup Survey, 1994-95
- Characteristics of Public School Districts, 1993–94
- School Principals in the United States, 1993–94

Issue Briefs

- Are High School Teachers Teaching Core Subjects Without College Majors or Minors in Those Subjects? (Issue Brief, NCES 96–839)
- Where Do Minority Principals Work? (Issue Brief, NCES 96–840)
- What Academic Programs are Offered Most Frequently in Schools Serving American Indian and Alaska Native Students? (Issue Brief, NCES 96–841)
- How Safe are the Public Schools: What Do Teachers Say? (Issue Brief, NCES 96–842)
- Extended Day Programs in Elementary and Combined Schools (Issue Brief, NCES 96–843)
- What Criteria are Used in Considering Teacher Applicants? (Issue Brief, NCES 96–844)
- Private School Graduation Requirements (Issue Brief, NCES 95–145)
- How Much Time Do Public and Private School Teachers Spend in Their Work? (Issue Brief, NCES 95–709)

- Migration and Attrition of Public and Private School Teachers: 1991–92 (Issue Brief, NCES 95–770)
- Which Types of Schools Have the Highest Teacher Turnover? (Issue Brief, NCES 95–778)
- Libraries/Media Centers in Schools: Are There Sufficient Resources? (Issue Brief, NCES 95–779)
- Who Influences Decisionmaking About School Curriculum: What Do Principals Say? (Issue Brief, NCES 95–780)
- Public and Private School Principals: Are There Too Few Women? (Issue Brief, NCES 94-192)
- Sources of Newly Hired Teachers in Public and Private Schools, 1988-91 (Issue Brief, NCES 94-481)
- What are the Most Serious Problems in Schools? (Issue Brief, NCES 93-149)
- Teacher Salaries—Are They Competitive? (Issue Brief, NCES 93-450)
- Teaching and Administrative Work Experience of Public School Principals (Issue Brief, NCES 93-452)
- Teacher Attrition and Migration (Issue Brief, NCES 92-148)

Video

- America's Teachers: Profile of a Profession

Methods

- 1993-94 Schools and Staffing Survey: Sample Design and Estimation (Technical Report, NCES 96-089)
- An Exploratory Analysis of Nonrespondents in the 1990–91 Schools and Staffing Survey (NCES 96–338)
- Design Effects and Generalized Variance Functions for the 1990–91 Schools and Staffing Surveys (SASS) Volume I—User's Manual (NCES 95–342I)
- Design Effects and Generalized Variance Functions for the 1990–91 Schools and Staffing Surveys (SASS) Volume II—Technical Report (NCES 95–340II)
- Quality Profile for SASS: Aspects of the Quality of Data in the Schools and Staffing Surveys (Technical Report, NCES 94-340)

- 1990-91 Schools and Staffing Survey: Sample Design and Estimation (Technical Report, NCES 93-449)
- Modeling Teacher Supply and Demand, with Commentary (Research and Development Report, NCES 93-461)
- 1987-88 Schools and Staffing Survey: Sample Design and Estimation (Technical Report, NCES 91-127)

CD-ROMs

- Schools and Staffing Survey: 1993–94 Electronic Codebook and Public Use Data
- Schools and Staffing Survey: 1990–91 Electronic Codebook and Public Use Data
- Schools and Staffing Survey, 1987–88 Microdata and Documentation

Questionnaires

- SASS and PSS Questionnaires 1993–1994 (NCES 94-674)
- SASS and TFS Questionnaires 1990–1991
- SASS and TFS Questionnaires 1987–1988

User's Manuals

- 1990–91 Schools and Staffing Survey: Data File User's Manual Volume I: Survey Documentation (NCES 93-144-I)
- 1990–91 Schools and Staffing Survey: Data File User's Manual Volume II: Restricted-Use codebook (NCES 93-144-II)
- 1990–91 Schools and Staffing Survey: Data File User's Manual Volume III: Public-Use codebook (NCES 93-144-III)
- 1990–91 Schools and Staffing Survey: Data File User's Manual Volume IV: Bureau of Indian Affairs (BIA) Restricted-Use Codebooks: Administrator, Schools, and Teachers (NCES 93-144-IV)
- 1991–92 Teacher Followup Survey Data File User's Manual—Public-Use Version (NCES 94-331)
- 1991–92 Teacher Followup Survey Data File User's Manual—Restricted-Use Version (NCES 94-478)
- 1988–89 Teacher Followup Survey Data File User's Manual—Public-Use Version (NCES 92-058)

Forthcoming User's Manuals

- 1993–94 Schools and Staffing Survey, Data File User's Manual Volume I: Survey Documentation
- 1993–94 Schools and Staffing Survey, Data File User's Manual Volume II: Restricted-Use Codebook
- 1993–94 Schools and Staffing Survey, Data File User's Manual Volume III: Public-Use Codebook
- 1993–94 Schools and Staffing Survey, Data File User's Manual Volume IV: Bureau of Indian Affairs (BIA) Restricted-Use Codebooks: Administrator, Schools, and Teachers
- 1993–94 Schools and Staffing Survey, Data File User's Manual Volume V: Restricted-Use Codebook Students' Records

Conference Papers

- Using Classroom Instructional Process Items in National Center for Education Statistics Study To Measure Student Opportunity to Learn: A Progress Report
- Heaven or Hell? The Teaching Environment of Beginning Teachers
- Using Opportunity to Learn Items in Elementary and Secondary National Surveys
- Characteristics of Public and Private School Teachers
- Characteristics of Mathematics and Science Teachers
- Teacher Training, Certification and Assignment
- Teacher Turnover: Patterns of Entry To and Exit from Teaching
- Moonlighting Among Public and Private School Teachers
- Characteristics of Bilingual Education and English as a Second Language Teachers
- Highlights of Minority Data from the Schools and Staffing Survey
- Teacher Incentive Research with SASS
- Teacher Salaries: Comparing States After Adjusting for Teacher Experience and Education
- What are the Characteristics of Principals Identified as Effective by Teachers?

- Schools at Risk: Results of the 1987–88 Schools and Staffing Survey
- Destinations of Movers and Leavers: Where Do They Go?
- Classroom Environment and Support of Beginning Teachers: A Test of the "Crucible versus Cradle" Theory of Teacher Induction
- Why do Teachers Leave Teaching? Reasons for Teacher Attrition from the Teacher Followup Survey

NCES Working Papers Related to SASS

WP 94–01 Schools and Staffing Survey (SASS). Papers Presented at the Meetings of the American Statistical Association

Section on Survey Research Methods, August 1992

a. "The Schools and Staffing Survey: Research Issues"
b. "The Schools and Staffing Survey: How Reinterview Measures Data Quality"
c. "Mail Versus Telephone Response in the 1991 Schools and Staffing Surveys"
d. "Questionnaire Research in the Schools and Staffing Survey: A Cognitive Approach"
e. "Balance Half-Sample Replication with Aggregation Units"
f. "Characteristics of Nonrespondents in the Schools and Staffing Surveys' School Sample"
g. "Improving Reliability and Comparability on NCES Data on Teachers and Other Education Staff"

Establishment Surveys Conference, June 1993

a. "Sampling Frames at the United States National Center for Education Statistics"
b. "Monitoring Data Quality in Education Surveys"

Section on Survey Research Methods, August 1993

a. "Generalization Variance Functions for the Schools and Staffing Surveys"
b. "A Bootstrap Variance Estimator for the Schools and Staffing Survey"
c. "Adjusting for Nonresponse Bias of Correlated Items Using Logistic Regression"
d. "Comparisons of School Locale Setting: Self-Reported Versus Assigned"
e. "Characteristics of Nonrespondents to the 1990–91 Schools and Staffing Survey"

Social Statistics Section, August 1993

a. "Implicit Markets for Teacher Quality and School Attributes"
b. "Who Decides? Principals' and Teachers' Views on Decision-Making"
c. "Determinants of Pupil-Teacher Ratios at School Sites: Evidence from the Schools and Staffing Survey"

WP 94–02 Generalized Variance Estimates for Schools and Staffing Survey (SASS)

WP 94–03 1991 Schools and Staffing Survey (SASS) Reinterview Response Variance Report

WP 94–04 The Accuracy of Teachers' Self-report on Their Postsecondary Education: Teacher Transcript Study, Schools and Staffing Survey

WP 94–06 Six Papers on Teachers from the 1990–91 Schools and Staffing Survey and Other Related Surveys

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b. "Designing the Teacher Follow-up Survey (TFS): Issues and Content)"
c. "Understanding the Supply of Elementary and Secondary Teachers: The Role of the School and Staffing Survey and the Teacher Followup Survey"
d. "Teacher Retention/Attrition: Issues for Research"
e. "Reflections on a SASS Longitudinal Study"
f. "Whither Didst Thou Go? Retention, Reassignment, Migration, and Attrition of Special and General Education Teachers in National Perspective"

WP 95–01 Schools and Staffing Survey: 1994. Papers Presented at the 1994 Meeting of the American Statistical Association (95–01)

Estimation Issues in School Surveys

a. "Intersurvey Consistency in School Surveys"
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Response and Coverage Issues in School Surveys

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Education Research Using the Schools and Staffing Surveys and the National Education Longitudinal Study

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